



**Conformance Test Report  
for EN301 406 v1.5.1 (2003-07)  
Digital Enhanced Cordless Telecommunic. (DECT);  
Harmonized EN for Digital Enhanced Cordless  
Telecommunications(DECT) covering essential  
requirements under article 3.2 of R&TTE Directive;  
Generic radio**

**Report No.: 60.861.9.070.01R**

Client:	Vtech Telecommunications Ltd.
Product:	DECT Phone
System Under Test (SUT):	E1425 (PP)
Manufacturer	Vtech Telecommunications Ltd.
Date test item received:	2009/07/29
Date test campaign completed	2009/09/30
Date of issue:	2009/10/19
Test results:	COMPLIED

*The test report include test result of conformance log layer 1.*

*Total number of pages of this test report: 27 pages*

**The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.**

Approved by

Deputy Telecom Manager

**TÜV SÜD Hong Kong Ltd.  
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**Report No.: 60.861.9.070.01R**

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## 1.1 Reason for measurements and identification of the protocol

The Test Candidate shall be tested to

DECT, General terminal attachment requirements

EN 300 406 V1.5.1	2003-07
EN 300 175-2, PHL	July 2003

### 1.1.1 Global statement of conformance

Has the applicant filled out the Client Test Preparation Information in accordance to EN301 406	<b>Yes</b>
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see annex ,EN301 406 Statement of the applicant

## 1.2 Identification and functional description of the test candidate

### 1.2.1 Client identification

Name	Vtech Telecommunications Ltd.
Contact person	Mr. Michael Tsu
Address	23/F, Tai Ping Industrial Centre, Block 1, 57 Ting Kok Road, Tai Po, Hong Kong
Phone No.	+852 2680 5398
Fax No.	+852 2680 1468

### 1.2.2 Identification of the Test Candidate:

RFPI of the FP with int. antenna	- -
RFPI of the FP with temp. ant. con.	0543210000
Hardware version	- -
Software version	- -
Operating voltage nom/min/max	2.4VDC/2.2VDC/2.8VDC
Serial No of the FP with int. antenna.	- -
Serial No of the FP with temp. ant. con.	- -

### 1.2.3 Functional description

The Test Candidate is a Portable Part with integrated antennas of a cordless telephone system for 3.1 kHz voice-communications on **DECT-standard**. For the integrated antennas a diversity-switch is included to the equipment. This Portable Part is used in combination with a Fixed Part (FP) for connections to the analogue public switched telephone network

For the tests one sample with integrated antenna and one sample with 50  $\Omega$ -connector were available to the test lab.

### 1.3 Climatic Conditions

Temperature °C	Rel. Humidity %	Atmospheric Pressure
nominal value		
aimed +15°C - +35°C	aimed 20% - 75%	aimed 86 - 106 kPa

The requirements for temperature, rel. humidity and atmospheric pressure were observed and be within the specified range.

### 1.4 Measurement accuracy

The measurement accuracy is in accordance with EN301 406 V1.5.1 (2003-07)

Note: All values reflect a confidence level of 95 %.

The actual measurement uncertainties are described at each test.

### 1.5 Test equipment used

Equipment	Manufacturer.:	Type.:	Inventory-No.:	calibration date
R&S DECT Type approval system TS 8930 FTAS:				
Process Controller			H1882000176	
RF-Generator	R&S	SME03	H1882000179	March,05,2009
RF-Generator	R&S	SME03	H1882000187	March,05,2009
Spectrum- Analyzer	R&S		H1882000186	March,05,2009
Switch Matrix			H1882000185	
RF-Generator	R&S	SMP02	H1882000162	March,05,2009
Software			DOS-Version 3.02F from 19.02.99	
Control-PC			H1882000140	
Software T_Case_12			V 3.1 from 19.07.99	
Other test equipment				
Digital Radio tester		CTS65	13046801-001	July,13,2009
EMC Analyzer		E7405A	13059601-001	January,9,2009
Power Amplifier		ZHL-42W	13040712-002	April,03,2009
Horn Antenna		3115	13059204-001	July,13,2009
Horn Antenna		3115	13059204-002	July,13,2009
Bilog Antenna		CBL6111C	N/A	July,22,2009
Temp.& Humid. Chamber		SH240	13490520-001	March,05,2009
Anechoic Chamber		TDK	N/A	May, 27,2009

### 1.6 Explanation of the results abbreviations

P = pass, inside of the specification

P\* = pass, inside of the specification in consideration of the test accuracy

F = failed, exceeding the specification

O = not implicated

- = not tested

? = no clear result considering to the specification

\* = see note

## 1.7 Comments for testing

Delivery date of Test Candidate: . 2009.07.29  
The tests were done from 2009.07.29 at 2009.09.30

### Test Location: T01

During the tests were present:  
Mr. Jeff Pong from **TÜV SÜD Hong Kong Ltd.**  
Mr. Michael Tsu from **Vtech Telecommunication Ltd.**

The test set-up and tests are according to EN301 406 V1.5.1(2003-07) and **DTAAB DT.04 V10 from 11/99** and the internal test comments of the test lab.

All measurements, in exception of parts of Testcase 6 and Testcase 12, were done at the equipment with 50  $\Omega$ -temporary antenna connector.

All radiated measurements were done in the anechoic chamber  
The test site and the whole test equipment is according to standards  
CTR6, TBR 6, third edition, June 1999.  
EN301 406 V1.5.1(2003-07)

## 2 IUT conformance status according to EN301 406 V1.5.1 (2003-07)

### 2.1 IUT conformance summary

The IUT **has not been** shown by conformance assessment to be non conforming to the general terminal attachment requirements, EN301 406

### 2.2 EN301 406 results overview

Test case	Point	Testcase description	Remarks	Sel.	Run	Verdict
1	4.5.1	Accuracy and stability of RF carriers		Y	Y	Pass
2	4.5.2	Timing jitter: slot - slot on the same channel		Y	Y	Pass
3		Reference timing accuracy of a RFP		N	N	-----
4		Measurement of packet timing accuracy	only for portable part	Y	Y	Pass
5	4.5.3	Transmission burst		Y	Y	Pass
6	4.5.4.1.1	Transmitted power (with an internal antenna) NTP		Y	Y	Pass
7	4.5.4.1.2	Transmitted power (with an external antenna connector)		Y	Y	Pass
8	4.5.5	RF carrier modulation		Y	Y	Pass
9	4.5.6.2	Emissions due to modulation		Y	Y	Pass
10	4.5.6.3	Emissions due to transmitter transients		Y	Y	Pass
11	4.5.6.4	Emissions due to intermodulation	only for basestation with more than one transmitter	N	N	---
12	4.5.6.5	Spurious emissions when allocated a transmit channel	Conducted spurious	Y	Y	Pass
			Radiated spurious			Pass
13	4.5.7.1	Radio receiver sensitivity		Y	Y	Pass
14	4.5.7.2	Radio receiver reference bit error ratio		Y	Y	Pass
15	4.5.7.3	Radio receiver interference performance		Y	Y	Pass
16	4.5.7.4	Radio receiver blocking case 1		Y	Y	Pass
17	4.5.7.5	Radio receiver blocking case 2		Y	Y	Pass
18	4.5.7.6	Receiver intermodulation performance		Y	Y	Pass
19	4.5.7.7	Spurious emissions when the radio endpoint has no allocated transmit channel	only for portable part	Y	Y	Pass

*EN301 406 results overview*

Test case	Point	Testcase description	Remarks	Sel.	Verdict
20	4.5.8	Synchronisation port		N	<b>No test</b>
21	4.5.9	Equipment identity verification /safeguards		N	<b>Manufacturer declaration</b>
22	4.5.10	Efficient use of radio spectrum		N	<b>Manufacturer declaration</b>
23	4.5.11	WRS		N	<b>No test</b>
24	4.5.12	PP to PP communication		N	<b>No test</b>
25	4.5.13	Direct communication		N	<b>No test</b>
26	4.5.14	Higher level modulation		N	<b>No test</b>



## 2.3 Test campaign report

### 2.3.1 TC 1 Accuracy and stability of RF carriers (4.5.1)

aimed for  $t \geq 1$  s with  $\Delta f \leq \pm 50$  kHz under nominal and extreme conditions

	Deviation [kHz]		
	channel 0	channel 5	channel 9
nom. Temperature and nom. Voltage	<b>7.13</b>	<b>5.36</b>	<b>5.12</b>
0°C and minimum voltage	<b>1.72</b>	<b>1.32</b>	<b>1.65</b>
0°C and maximum voltage	<b>1.50</b>	<b>1.34</b>	<b>-0.19</b>
+40°C and minimum voltage	<b>1.47</b>	<b>1.30</b>	<b>1.42</b>
+40°C and maximum voltage	<b>1.38</b>	<b>1.03</b>	<b>1.51</b>

Measurement uncertainty: < 1%

aimed for  $t \leq 1$  s with  $\Delta f \leq \pm 100$  kHz under nominal and extreme conditions

	Deviation [kHz]		
	Channel 0	Channel 5	Channel 9
nom. Temperature and nom. Voltage	<b>6.96</b>	<b>5.37</b>	<b>4.97</b>
0°C and minimum voltage	<b>1.62</b>	<b>-0.48</b>	<b>-0.08</b>
0°C and maximum voltage	<b>1.41</b>	<b>-0.40</b>	<b>-0.18</b>
+40°C and minimum voltage	<b>1.64</b>	<b>1.44</b>	<b>1.36</b>
+40°C and maximum voltage	<b>1.41</b>	<b>0.96</b>	<b>1.53</b>

Comment: minimum voltage = 2.2V

### 2.3.2 TC 2 Timing jitter: slot- slot on the same channel (8.3)

Test in channel 5 aimed < $\pm 1$ $\mu$ s	Deviation [ $\mu$ s]	
	positive	Negative
nom. Temperature and nom. Voltage	<b>0.143</b>	<b>-0.128</b>
0°C and minimum voltage	<b>0.176</b>	<b>-0.152</b>
0°C and maximum voltage	<b>0.165</b>	<b>-0.162</b>
+40°C and minimum voltage	<b>0.141</b>	<b>-0.130</b>
+40°C and maximum voltage	<b>0.128</b>	<b>-0.109</b>

Measurement uncertainty:  $\leq 77.4$  ns

Comment: minimum voltage = 2.2V

### 2.3.3 TC 3 Reference timing accuracy of a RFP only recommended for fixed part

### 2.3.4 TC 4 Measurement of packet transmission accuracy

The packet time delay minimum shall be greater than 5ms - 2 $\mu$ s

The packet time delay maximum shall be less than 5ms + 2 $\mu$ s

Voltage(V)	Temperature(°C)	Packet Time Delay( $\mu$ s)					
		channel 0		channel 5		channel 9	
		max.	min.	max.	min.	max.	min.
nom.	nom.	<b>0.155</b>	<b>-0.101</b>	<b>0.159</b>	<b>-0.102</b>	<b>0.116</b>	<b>-0.110</b>
min.	min.	<b>0.177</b>	<b>-0.151</b>	<b>0.133</b>	<b>-0.099</b>	<b>0.111</b>	<b>-0.156</b>
	max.	<b>0.148</b>	<b>-0.158</b>	<b>0.128</b>	<b>-0.130</b>	<b>0.105</b>	<b>-0.095</b>
max.	min.	<b>0.131</b>	<b>-0.163</b>	<b>0.102</b>	<b>-0.101</b>	<b>0.102</b>	<b>-0.143</b>
	max.	<b>0.094</b>	<b>-0.128</b>	<b>0.104</b>	<b>-0.102</b>	<b>0.104</b>	<b>-0.135</b>

Measurement uncertainty:  $\leq 77.4$  ns

Comment: minimum voltage = 2.2V

P  
P  
P  
P  
P

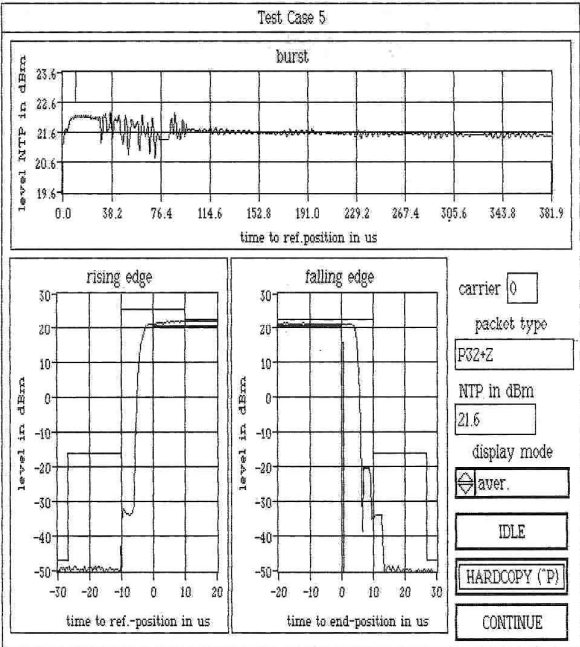
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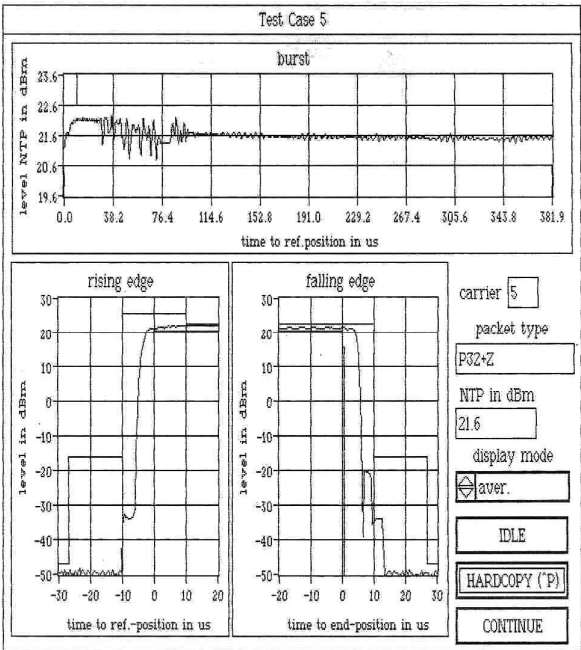
2.3.5 TC 5 Transmission Burst (4.5.3)

Measurement uncertainty: + 0.85 dB / -0.92 dB



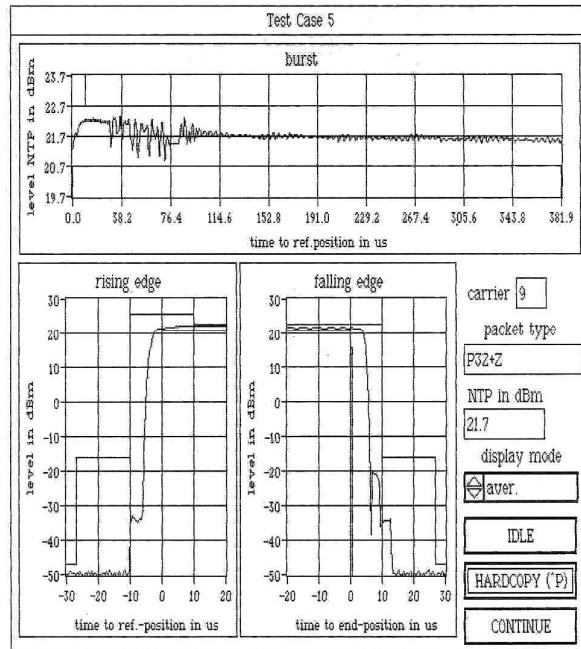
Nom. Temperature and nom. Voltage

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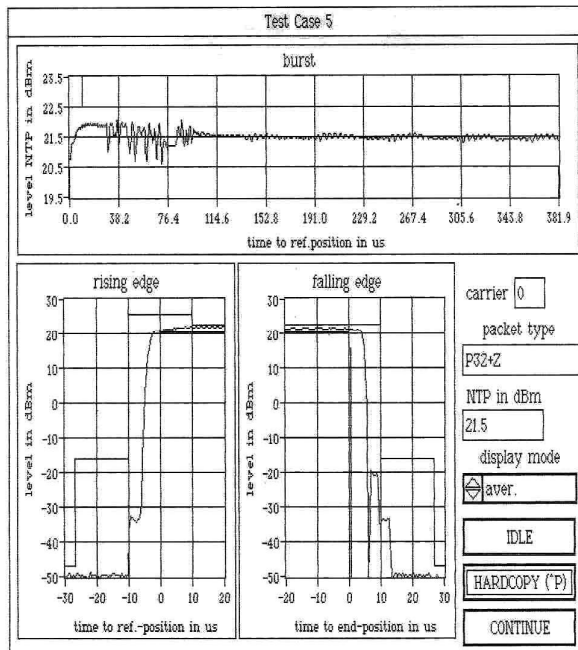
Nom. Temperature and nom. Voltage

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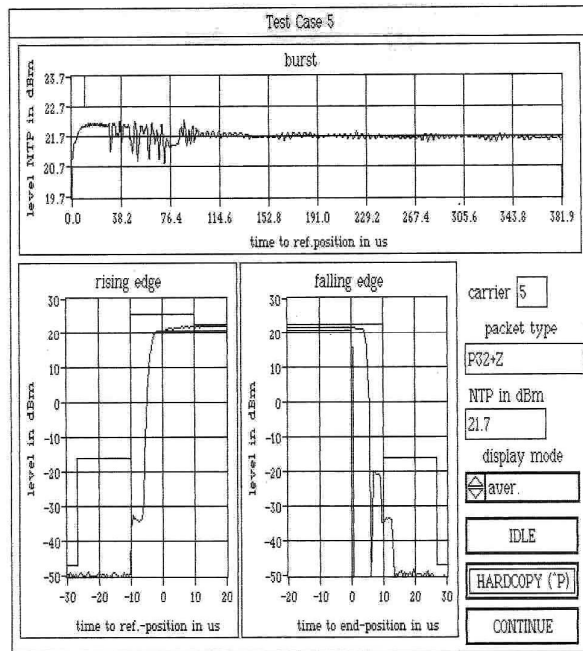
Nom. Temperature and nom. Voltage

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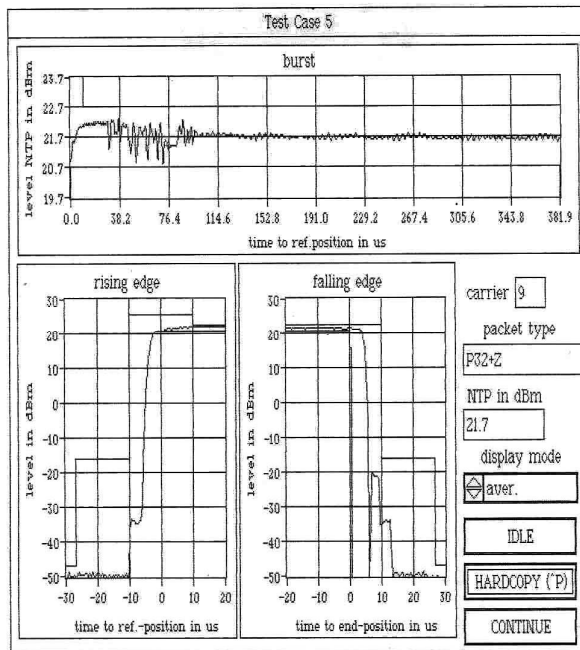
+0°C temperature and nom. Voltage

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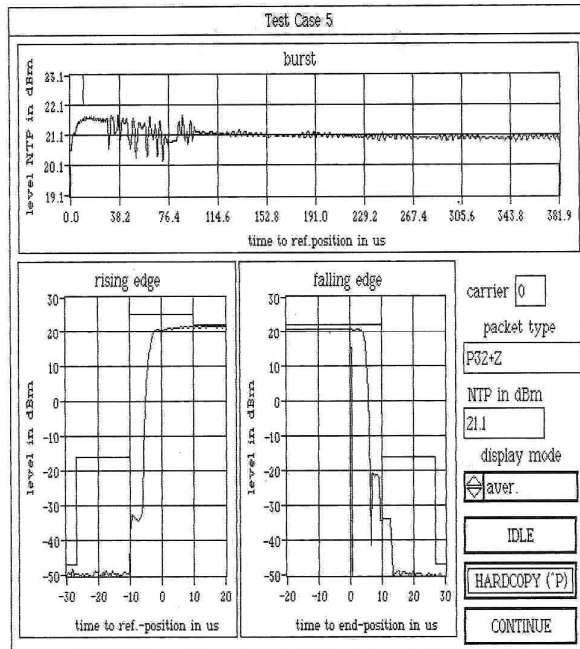
+0°C temperature and nom. Voltage

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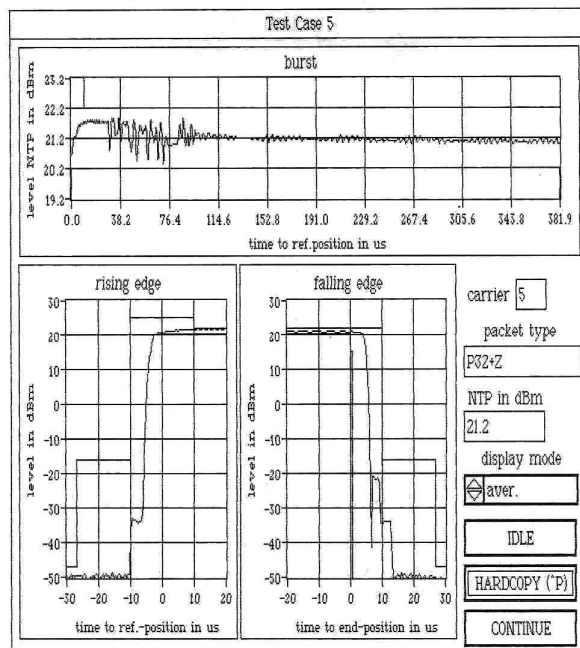
+0°C temperature and nom. Voltage

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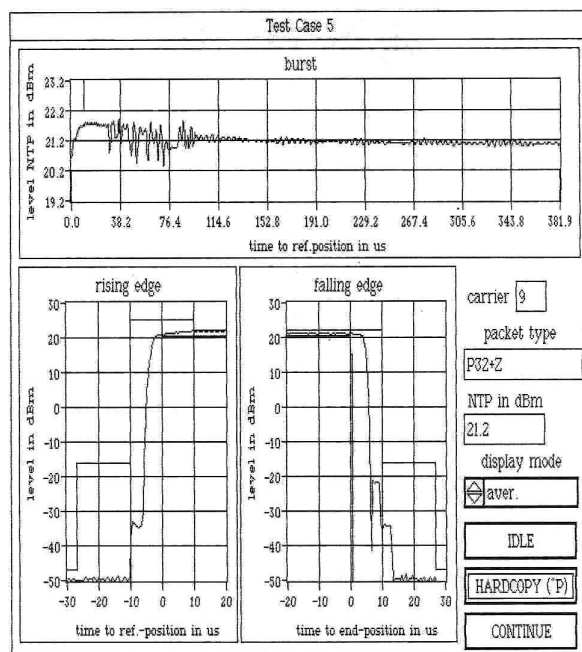
+40°C temperature and nom. Voltage

P



+40°C temperature and nom. Voltage

P



+40°C temperature and nom. Voltage

P

### 2.3.6 TC 6 Transmitted power: PP and RFP with integral antenna (4.5.4.1.1)

Conducted RF-output power in the Burst:

aimed  $\leq 250$  mW (24 dBm)

Height of receive antenna

actual = **1.50 m**

Radiated field strength maximum at position in degrees

ant. 0 actual = **10°** hor

Antenna gain: aimed with max. 12 dB

Antenna	conducted Power	radiated Power	Antenna gain
Channel 0	21.60 dBm	16.25 dBm	-5.35 dB
Channel 5	21.60 dBm	15.82 dBm	-5.78 dB
Channel 9	21.70 dBm	15.51 dBm	-6.19 dB

P

Comment: This measurement is necessary only for internal antenna connection(s).

Measurement uncertainty radiated: + 3.53 dB / -3.53 dB

Measurement uncertainty conducted: + 0.85 dB / -0.92 dB

### 2.3.7 TC 7 Transmitted power: FP with an external antenna Connector (4.5.4.1.2)

P

Antenna	conductive Power
Channel 0	21.60 dBm
Channel 5	21.60 dBm
Channel 9	21.70 dBm

### 2.3.8 TC 8 RF-carrier modulation (4.5.5)

part 1: aimed  $> \pm 259 \text{ kHz} < \pm 403 \text{ kHz}$   
part 2-3: aimed  $> \pm 202 \text{ kHz} < \pm 403 \text{ kHz}$   
part 4: aimed  $< \pm 17 \text{ kHz/slot}$

Measurement uncertainty part 1-3:  $\pm 10 \text{ kHz}$   
part 4:  $\pm 2 \text{ kHz}$

TRAFFIC SLOT: 20

TRAFFIC CARRIER: 5

PACKET TYPE: P32+Z

part1: 10 bursts evaluated

maximum positive modulation: 323.18 kHz

maximum negative modulation: -315.07 kHz

part2: 10 bursts evaluated

maximum positive modulation: 339.65 kHz

maximum negative modulation: -338.32 kHz

part3: 10 bursts evaluated

maximum positive modulation: 274.58 kHz

maximum negative modulation: -277.61 kHz

part4: 200 bursts evaluated

averaged frequency drift: 1.49 kHz/slot

P

P

P

P

P

P

P

### 2.3.9 TC 9 Emissions due to modulation (4.5.6.2)

Measurement uncertainty:  $+ 0.49 \text{ dB} / - 0.51 \text{ dB}$

One exception  $< -33 \text{ dBm}$  (500 nW) permissible

TRAFFIC SLOT: 22

TRAFFIC CARRIER: 0

PACKET TYPE: P32+Z

measured NTP: 21.60 dBm

measured values

limits

CARRIER 0: integrated power

21.60 dBm

---

P

CARRIER 1: integrated power

- 22.05 dBm

-8 dBm

P

CARRIER 2: integrated power

- 43.31 dBm

-30 dBm

P

CARRIER 3: integrated power

- 48.01 dBm

-41 dBm

P

CARRIER 4: integrated power

- 49.50 dBm

-44 dBm

P

CARRIER 5: integrated power

- 50.18 dBm

-44 dBm

P

CARRIER 6: integrated power

- 50.63 dBm

-44 dBm

P

CARRIER 7: integrated power

- 50.85 dBm

-44 dBm

P

CARRIER 8: integrated power

- 50.82 dBm

-44 dBm

P

CARRIER 9: integrated power

- 51.13 dBm

-44 dBm

P

TRAFFIC SLOT: 14

TRAFFIC CARRIER: 5

PACKET TYPE: P32+Z

measured NTP: 21.60 dBm

measured values

limits

CARRIER 0: integrated power

- 50.7 dBm

-44 dBm

P

CARRIER 1: integrated power

- 49.9 dBm

-44 dBm

P

CARRIER 2: integrated power

- 48.2 dBm

-41 dBm

P

CARRIER 3: integrated power

- 43.8 dBm

-30 dBm

P

CARRIER 4: integrated power

- 22.5 dBm

-8 dBm

P

CARRIER 5: integrated power

21.6 dBm

---

P

CARRIER 6:	integrated power	- 22.4 dBm	-8 dBm	P
		5		
CARRIER 7:	integrated power	- 43.5 dBm	-30 dBm	P
		9		
CARRIER 8:	integrated power	- 48.6 dBm	-41 dBm	P
		3		
CARRIER 9:	integrated power	- 49.7 dBm	-44 dBm	P
		9		



TRAFFIC SLOT:	16				
TRAFFIC CARRIER:	9				
PACKET TYPE:	P32+Z				
measured NTP:	21.70 dBm				
		measured values	limits		
CARRIER 0:	integrated power	- 51.5 dBm	-44 dBm	P	
		0			
CARRIER 1:	integrated power	- 51.2 dBm	-44 dBm	P	
		0			
CARRIER 2:	integrated power	- 51.1 dBm	-44 dBm	P	
		4			
CARRIER 3:	integrated power	- 50.9 dBm	-44 dBm	P	
		5			
CARRIER 4:	integrated power	- 50.5 dBm	-44 dBm	P	
		8			
CARRIER 5:	integrated power	- 49.6 dBm	-44 dBm	P	
		3			
CARRIER 6:	integrated power	- 48.2 dBm	-41 dBm	P	
		0			
CARRIER 7:	integrated power	- 44.2 dBm	-30 dBm	P	
		6			
CARRIER 8:	integrated power	- 22.5 dBm	-8 dBm	P	
		7			
CARRIER 9:	integrated power	21.7 dBm	---	P	
		0			

#### 2.3.10 TC 10 Emissions due to transmitter transients (4.5.6.3)

Measurement uncertainty: + 0.49 dB / -0.51 dB

TRAFFIC SLOT:	18				
TRAFFIC CARRIER:	0				
PACKET TYPE:	P32+Z				
		measured values	limits		
CARRIER 0:	max. Power	160.41 mW ( 22.05 dBm)	---	p	
CARRIER 1:	max. Power	47.82 uW ( -13.20 dBm)	-6 dBm	p	
CARRIER 2:	max. Power	95.55 nW ( -40.20 dBm)	-14 dBm	p	
CARRIER 3:	max. Power	20.65 nW ( -46.85 dBm)	-24 dBm	p	
CARRIER 4:	max. Power	115.21 nW ( -39.39 dBm)	-30 dBm	p	
CARRIER 5:	max. Power	11.31 nW ( -49.47 dBm)	-30 dBm	p	
CARRIER 6:	max. Power	17.03 nW ( -47.69 dBm)	-30 dBm	p	
CARRIER 7:	max. Power	9.32 nW ( -50.30 dBm)	-30 dBm	p	
CARRIER 8:	max. Power	90.13 nW ( -40.45 dBm)	-30 dBm	p	
CARRIER 9:	max. Power	11.18 nW ( -49.52 dBm)	-30 dBm	p	

TRAFFIC SLOT:	20					
TRAFFIC CARRIER:	1					
PACKET TYPE:	P32+Z					
		measured values		limits		
CARRIER 0:	max. Power	44.84 uW ( -13.48 dBm)		-6 dBm		p
CARRIER 1:	max. Power	161.35 mW ( 22.08 dBm)		---		p
CARRIER 2:	max. Power	48.38 uW ( -13.15 dBm)		-6 dBm		p
CARRIER 3:	max. Power	96.68 nW ( -40.15 dBm)		-14 dBm		p
CARRIER 4:	max. Power	19.59 nW ( -47.08 dBm)		-24 dBm		p
CARRIER 5:	max. Power	115.89 nW ( -39.36 dBm)		-30 dBm		p
CARRIER 6:	max. Power	12.56 nW ( -49.01 dBm)		-30 dBm		p
CARRIER 7:	max. Power	16.83 nW ( -47.74 dBm)		-30 dBm		p
CARRIER 8:	max. Power	10.79 nW ( -49.67 dBm)		-30 dBm		p
CARRIER 9:	max. Power	88.04 nW ( -40.55 dBm)		-30 dBm		p
TRAFFIC SLOT:	22					
TRAFFIC CARRIER:	2					
PACKET TYPE:	P32+Z					
		measured values		limits		
CARRIER 0:	max. Power	86.01 nW ( -40.65 dBm)		-14 dBm		p
CARRIER 1:	max. Power	42.04 uW ( -13.76 dBm)		-6 dBm		p
CARRIER 2:	max. Power	165.17 mW ( 22.18 dBm)		---		p
CARRIER 3:	max. Power	38.97 uW ( -14.09 dBm)		-6 dBm		p
CARRIER 4:	max. Power	78.78 nW ( -41.04 dBm)		-14 dBm		p
CARRIER 5:	max. Power	25.79 nW ( -45.89 dBm)		-24 dBm		p
CARRIER 6:	max. Power	112.55 nW ( -39.49 dBm)		-30 dBm		p
CARRIER 7:	max. Power	12.42 nW ( -49.06 dBm)		-30 dBm		p
CARRIER 8:	max. Power	20.65 nW ( -46.85 dBm)		-30 dBm		p
CARRIER 9:	max. Power	10.18 nW ( -49.92 dBm)		-30 dBm		p
TRAFFIC SLOT:	14					
TRAFFIC CARRIER:	3					
PACKET TYPE:	P32+Z					
		measured values		limits		
CARRIER 0:	max. Power	25.05 nW ( -46.01 dBm)		-24 dBm		p
CARRIER 1:	max. Power	91.19 nW ( -40.40 dBm)		-14 dBm		p
CARRIER 2:	max. Power	44.84 uW ( -13.48 dBm)		-6 dBm		p
CARRIER 3:	max. Power	165.17 mW ( 22.18 dBm)		---		p
CARRIER 4:	max. Power	44.06 uW ( -13.56 dBm)		-6 dBm		p
CARRIER 5:	max. Power	96.11 nW ( -40.17 dBm)		-14 dBm		p
CARRIER 6:	max. Power	23.76 nW ( -46.24 dBm)		-24 dBm		p
CARRIER 7:	max. Power	117.94 nW ( -39.28 dBm)		-30 dBm		p
CARRIER 8:	max. Power	11.92 nW ( -49.24 dBm)		-30 dBm		p
CARRIER 9:	max. Power	17.63 nW ( -47.54 dBm)		-30 dBm		p
TRAFFIC SLOT:	16					
TRAFFIC CARRIER:	4					
PACKET TYPE:	P32+Z					
		measured values		limits		
CARRIER 0:	max. Power	104.31 nW ( -39.82 dBm)		-30 dBm		p
CARRIER 1:	max. Power	20.41 nW ( -46.90 dBm)		-24 dBm		p
CARRIER 2:	max. Power	69.68 nW ( -41.57 dBm)		-14 dBm		p
CARRIER 3:	max. Power	43.80 uW ( -13.59 dBm)		-6 dBm		p

CARRIER 4:	max. Power	166.14 mW	( 22.20 dBm)	---	p
CARRIER 5:	max. Power	31.57 uW	( -15.01 dBm)	-6 dBm	p
CARRIER 6:	max. Power	93.34 nW	( -40.30 dBm)	-14 dBm	p
CARRIER 7:	max. Power	25.05 nW	( -46.01 dBm)	-24 dBm	p
CARRIER 8:	max. Power	124.31 nW	( -39.05 dBm)	-30 dBm	p
CARRIER 9:	max. Power	13.32 nW	( -48.76 dBm)	-30 dBm	p

TRAFFIC SLOT:	18				
TRAFFIC CARRIER:	5				
PACKET TYPE:	P32+Z				
		measured values		limits	
CARRIER 0:	max. Power	12.71 nW	( -48.96 dBm)	-30 dBm	p
CARRIER 1:	max. Power	90.65 nW	( -40.43 dBm)	-30 dBm	p
CARRIER 2:	max. Power	22.28 nW	( -46.52 dBm)	-24 dBm	p
CARRIER 3:	max. Power	66.89 nW	( -41.75 dBm)	-14 dBm	p
CARRIER 4:	max. Power	41.31 uW	( -13.84 dBm)	-6 dBm	p
CARRIER 5:	max. Power	171.06 mW	( 22.33 dBm)	---	p
CARRIER 6:	max. Power	47.26 uW	( -13.25 dBm)	-6 dBm	p
CARRIER 7:	max. Power	110.59 nW	( -39.56 dBm)	-14 dBm	p
CARRIER 8:	max. Power	18.81 nW	( -47.26 dBm)	-24 dBm	p
CARRIER 9:	max. Power	124.31 nW	( -39.05 dBm)	-30 dBm	p

TRAFFIC SLOT:	20				
TRAFFIC CARRIER:	6				
PACKET TYPE:	P32+Z				
		measured values		limits	
CARRIER 0:	max. Power	17.84 nW	( -47.49 dBm)	-30 dBm	p
CARRIER 1:	max. Power	13.09 nW	( -48.83 dBm)	-30 dBm	p
CARRIER 2:	max. Power	98.39 nW	( -40.07 dBm)	-30 dBm	p
CARRIER 3:	max. Power	21.64 nW	( -46.65 dBm)	-24 dBm	p
CARRIER 4:	max. Power	81.12 nW	( -40.91 dBm)	-14 dBm	p
CARRIER 5:	max. Power	48.66 uW	( -13.13 dBm)	-6 dBm	p
CARRIER 6:	max. Power	173.08 mW	( 22.38 dBm)	---	p
CARRIER 7:	max. Power	46.71 uW	( -13.31 dBm)	-6 dBm	p
CARRIER 8:	max. Power	74.75 nW	( -41.26 dBm)	-14 dBm	p
CARRIER 9:	max. Power	21.02 nW	( -46.77 dBm)	-24 dBm	p

TRAFFIC SLOT:	22				
TRAFFIC CARRIER:	7				
PACKET TYPE:	P32+Z				
		measured values		limits	
CARRIER 0:	max. Power	11.18 nW	( -49.52 dBm)	-30 dBm	p
CARRIER 1:	max. Power	14.63 nW	( -48.35 dBm)	-30 dBm	p
CARRIER 2:	max. Power	11.58 nW	( -49.36 dBm)	-30 dBm	p
CARRIER 3:	max. Power	87.02 nW	( -40.60 dBm)	-30 dBm	p
CARRIER 4:	max. Power	24.90 nW	( -46.04 dBm)	-24 dBm	p
CARRIER 5:	max. Power	69.68 nW	( -41.57 dBm)	-14 dBm	p
CARRIER 6:	max. Power	43.29 uW	( -13.64 dBm)	-6 dBm	p
CARRIER 7:	max. Power	168.09 mW	( 22.26 dBm)	---	p
CARRIER 8:	max. Power	32.32 uW	( -14.91 dBm)	-6 dBm	p
CARRIER 9:	max. Power	79.71 nW	( -40.98 dBm)	-14 dBm	p

TRAFFIC SLOT:	14				
TRAFFIC CARRIER:	8				
PACKET TYPE:	P32+Z				
		measured values		limits	
CARRIER 0:	max. Power	72.17 nW	( -41.42 dBm)	-30 dBm	p
CARRIER 1:	max. Power	10.79 nW	( -49.67 dBm)	-30 dBm	p
CARRIER 2:	max. Power	16.63 nW	( -47.79 dBm)	-30 dBm	p
CARRIER 3:	max. Power	12.42 nW	( -49.06 dBm)	-30 dBm	p

CARRIER 4:	max. Power	85.51 nW	( -40.68 dBm)	-30 dBm	p
CARRIER 5:	max. Power	20.65 nW	( -46.85 dBm)	-24 dBm	p
CARRIER 6:	max. Power	61.27 nW	( -42.13 dBm)	-14 dBm	p
CARRIER 7:	max. Power	43.29 uW	( -13.64 dBm)	-6 dBm	p
CARRIER 8:	max. Power	171.06 mW	( 22.33 dBm)	---	p
CARRIER 9:	max. Power	45.10 uW	( -13.46 dBm)	-6 dBm	p

TRAFFIC SLOT:	16				
TRAFFIC CARRIER:	9				
PACKET TYPE:	P32+Z				
		measured values		limits	
CARRIER 0:	max. Power	12.71 nW	( -48.96 dBm)	-30 dBm	p
CARRIER 1:	max. Power	74.75 nW	( -41.26 dBm)	-30 dBm	p
CARRIER 2:	max. Power	10.24 nW	( -49.90 dBm)	-30 dBm	p
CARRIER 3:	max. Power	12.20 nW	( -49.14 dBm)	-30 dBm	p
CARRIER 4:	max. Power	13.16 nW	( -48.81 dBm)	-30 dBm	p
CARRIER 5:	max. Power	101.31 nW	( -39.94 dBm)	-30 dBm	p
CARRIER 6:	max. Power	21.02 nW	( -46.77 dBm)	-24 dBm	p
CARRIER 7:	max. Power	57.79 nW	( -42.38 dBm)	-14 dBm	p
CARRIER 8:	max. Power	46.17 uW	( -13.36 dBm)	-6 dBm	p
CARRIER 9:	max. Power	171.06 mW	( 22.33 dBm)	---	p

### 2.3.11 TC 11 Emissions due to intermodulation (4.5.6.4)

*only for basestations with several transmitters*

### 2.3.12 TC 12 Spurious emissions when allocated a transmit channel (4.5.6.5)

Channel 5, radiated

values <6 dB of the limit-line are listed

30 MHz – 1 GHz	aimed ≤ -36 dBm	actual ≤ -52.25 dBm	P
1 GHz – 4 GHz	aimed ≤ -30 dBm	actual ≤ -41.63 dBm	P
Peak at 3.777 GHz hor.	aimed ≤ -30 dBm	actual ≤ -33.09 dBm	Remark
broadcast bands according to TBR 6	aimed ≤ -47 dBm	actual ≤ -60.45 dBm	P

Measurement uncertainty f<1GHz: + 2.89 dB / -2.98 dB

f>1GHz: + 3.53 dB / -3.53 dB

*Remark: Second harmonic is marginal result in uncertainty range*

Channel 5, conducted

TRAFFIC SLOT:	2		
TRAFFIC CARRIER:	5		
PACKET TYPE:	P32+Z		
Wideband Measurements			
Range from	300kHz to	12750.00 MHz	P
Measurement uncertainty f>1GHz: + 1.40 dB / -1.75 dB			

### 2.3.13 TC 13 Radio receiver sensitivity (4.5.7.1)

At a level of -83 dBm the BER shall be  $\leq 10^{-3}$ .  
Measurement uncertainty: + 0.25 dB / -0.27 dB

TRAFFIC SLOT: 16  
TRAFFIC CARRIER: 0  
PACKET TYPE: P32+Z  
Center frequency offset: 0 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: 50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: -50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

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TRAFFIC SLOT: 18  
TRAFFIC CARRIER: 5  
PACKET TYPE: P32+Z  
Center frequency offset: 0 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: 50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: -50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

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TRAFFIC SLOT: 20  
TRAFFIC CARRIER: 9  
PACKET TYPE: P32+Z  
Center frequency offset: 0 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: 50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit  
Center frequency offset: -50 kHz  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

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### 2.3.14 TC 14 Radio receiver reference bit error ratio (4.5.7.2)

At a level of -73 dBm the BER shall be  $\leq 10^{-5}$ , the FER shall be  $\leq 5 \cdot 10^{-4}$ .  
Measurement uncertainty: + 0.25 dB / -0.27 dB

TRAFFIC SLOT: 22  
TRAFFIC CARRIER: 0  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 32.000 Mbit

P

TRAFFIC SLOT: 14  
TRAFFIC CARRIER: 5  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 32.000 Mbit

P

TRAFFIC SLOT: 16  
TRAFFIC CARRIER: 9  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 32.000 Mbit

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[illegible]

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TRAFFIC SLOT: 14  
 TRAFFIC CARRIER: 9  
 PACKET TYPE: P32+Z  
 BER: FER: kBit: intf.car: lev in dBm:  
 0.000000 0.000000 320 -3 -33.0  
 0.000000 0.000000 320 -2 -33.0  
 0.000000 0.000000 320 -1 -33.0  
 0.000000 0.000000 320 0 -33.0  
 0.000000 0.000000 320 1 -33.0  
 0.000000 0.000000 320 2 -33.0  
 0.000000 0.000000 320 3 -33.0  
 0.000000 0.000000 320 4 -33.0  
 0.000000 0.000000 320 5 -33.0  
 0.000000 0.000000 320 6 -33.0  
 0.000000 0.000000 320 7 -39.0  
 0.000000 0.000000 320 8 -60.0  
 0.000020 0.000000 345 9 -84.0  
 0.000000 0.000000 320 10 -60.0  
 0.000000 0.000000 320 11 -39.0  
 0.000000 0.000000 320 12 -33.0

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### 2.3.16 TC 16 Radio receiver blocking, case 1 (4.5.7.4)

The BER shall be  $\leq 10^{-3}$ .

Measurement uncertainty: + 0.81 dB / -0.96 dB conducted

Measurement uncertainty: + 3.00 dB / -3.00 dB radiated

TRAFFIC SLOT: 16  
 TRAFFIC CARRIER: 5  
 PACKET TYPE: P32+Z  
 transmitter level: -80.00 dBm  
 additional CW interferer level: 0.00 dB  
 start frequency: 25.00 MHz  
 stop frequency: 100.00 MHz  
 step frequency: 1.00 MHz  
 320 kBit to evaluate

P

TRAFFIC SLOT: 14  
 TRAFFIC CARRIER: 5  
 PACKET TYPE: P32+Z  
 transmitter level: -80.00 dBm  
 additional CW interferer level: 0.00 dB  
 start frequency: 101.00 MHz  
 stop frequency: 2900.00 MHz  
 step frequency: 1.00 MHz  
 320 kBit to evaluate

p

TRAFFIC SLOT: 18  
 TRAFFIC CARRIER: 5  
 PACKET TYPE: P32+Z  
 transmitter level: -80.00 dBm  
 additional CW interferer level: 0.00 dB  
 start frequency: 2901.00 MHz  
 stop frequency: 12750.00 MHz  
 step frequency: 1.00 MHz  
 320 kBit to evaluate

P

### 2.3.17 TC 17 Radio receiver blocking, case 2 (4.5.7.5)

The BER shall be  $\leq 10^{-3}$ .

Measurement uncertainty: + 0.63 dB / -0.71 dB

TRAFFIC SLOT: 22  
TRAFFIC CARRIER: 0  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

P

TRAFFIC SLOT: 14  
TRAFFIC CARRIER: 5  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

P

TRAFFIC SLOT: 16  
TRAFFIC CARRIER: 9  
PACKET TYPE: P32+Z  
BER: 0.00000000 FER: 0.000000 evaluated: 320 kbit

P

### 2.3.18 TC 18 Receiver intermodulation performance (4.5.7.6)

The BER shall be  $\leq 10^{-3}$ .

Measurement uncertainty: + 0.40 dB / -0.43 dB

TRAFFIC SLOT: 18  
TRAFFIC CARRIER: 0  
PACKET TYPE: P32+Z  
M: 0 A: 2 B: 4  
BER: 0.000000 FER: 0.0000 eval.data: 320 kbit  
M: 0 A: -2 B: -4  
BER: 0.000000 FER: 0.0000 eval.data: 320 kbit

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TRAFFIC SLOT: 20  
TRAFFIC CARRIER: 5  
PACKET TYPE: P32+Z  
M: 5 A: 7 B: 9  
BER: 0.000000 FER: 0.0000 eval.data: 320 kbit  
M: 5 A: 3 B: 1  
BER: 0.000000 FER: 0.0000 eval.data: 320 kbit

P

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TRAFFIC SLOT: 22  
TRAFFIC CARRIER: 9  
PACKET TYPE: P32+Z  
M: 9 A: 11 B: 13  
BER: 0.000000 FER: 0.0000 eval.data: 320 kbit  
M: 9 A: 7 B: 5  
BER: 0.000003 FER: 0.0000 eval.data: 326 kbit

P

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### 2.3.19 TC 19 Spurious emissions when the radio endpoint has no allocated transmit ch. (4.5.7.7)

The EUT shall conformance

Outside the DECT band:

The emission as measured shall not be greater than 2nW (-57dbm) between 30MHz and 1GHz; and between 1GHz and 12.75GHz the emission as measured shall not exceed 20nW(-47dBm).

Inside the DECT band:

The power level as measured of any spurious emission shall not exceed 2nW(-57dBm) in a 1MHz Bandwidth.

In one 1MHz band within the DECT frequency band, the maximum allowable ERP shall be less than 20nW(-47dBm)

In up to two bands of 30KHz, the maximum ERP shall less than 250nw(-36dBm)

Radiated spurious emission

RF ranges	Maximun peak power level	Result/max.value
30MHz-----1.0GHz	2nW(-57dBm)	-60.95 dBm
1GHz-----4GHz	20nW(-47dBm)	-50.73 dBm
Inside the DECT band	2nW(-57dBm)	-60.42 dBm

Measurement uncertainty radiated: + 3.53 dB / -3.53 dB

*Remark:1-4Ghz is marginal result in uncertainty range*

Conducted spurious emission

RF ranges	Maximun peak power level	Result/max.value
30MHz-----1.0GHz	2nW(-57dBm)	-63.85 dBm
1GHz-----12.75GHz	20nW(-47dBm)	-51.81 dBm
Inside the DECT band	2nW(-57dBm)	-62.77 dBm

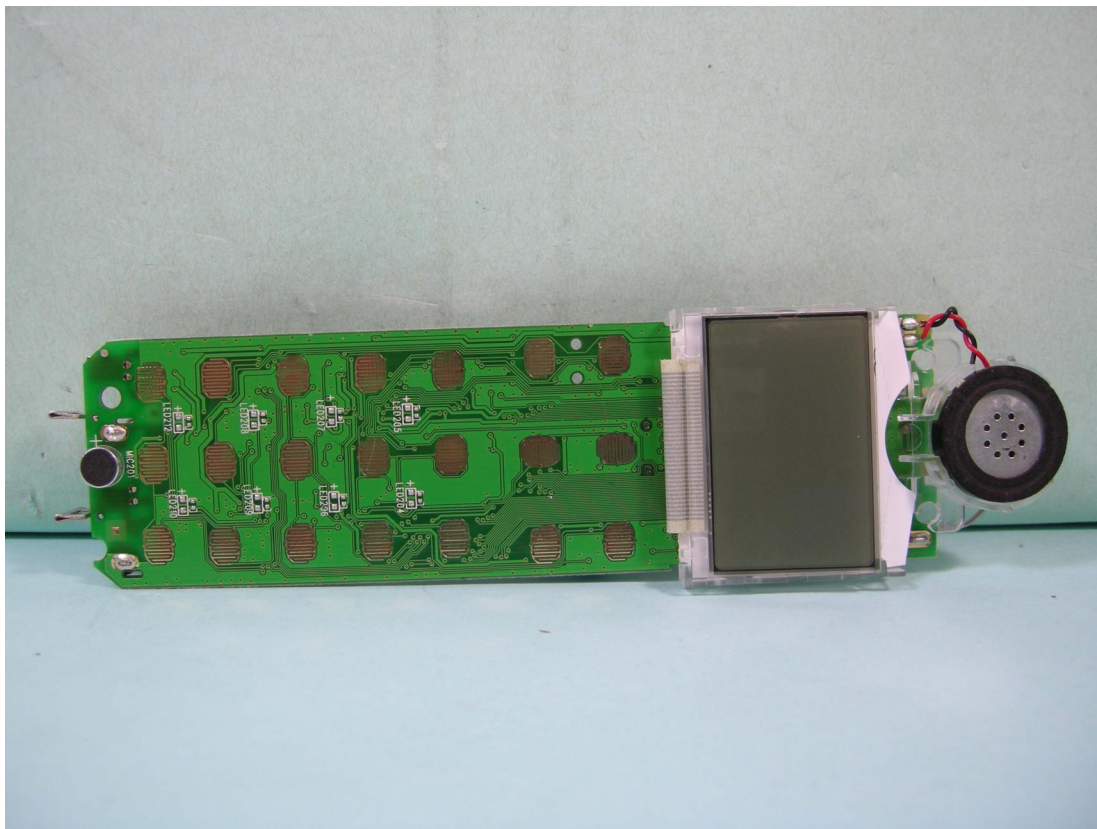
Measurement uncertainty conducted:+ 0.85 dB / -0.92 dB

- 2.3.20 TC 20 Synchronisation port (4.5.8)**  
No test
- 2.3.21 TC 21 Equipment identity verification (4.5.9)**  
Statement of the applicant“
- 2.3.22 TC 22 Efficient use of radio spectrum (4.5.10)**  
Statement of the applicant“
- 2.3.23 TC23 WRS (4.5.11)**  
No test
- 2.3.24 TC24 PP to PP communication (4.5.12)**  
No test
- 2.3.25 TC25 Direct communication (4.5.13)**  
No test
- 2.3.26 TC26 Higher level modulation (4.5.14)**  
No test

**4 Appendix** Photo of the Test Candidate (exterior)



Photo of the Test Candidate (interior)





# MANUFACTURER DECLARATION

VTech Telecommunication LTD  
23/F, Tai Ping Industrial Centre Block 1  
57 Ting Kok Road, Tai Po, Hong Kong

(Name / Address)

declare for the Digital Enhanced Cordless Telecommunications (DECT) telephone  
system specified as

**E1425**

(Model Number)

For the portable radio termination (PT):

The first PT transmission on the newly selected channel is made in accordance with the scan sequence of the addressed RFP.

To continue transmitting on the newly selected physical channel the PT transmissions within 2 frames of the first PT transmission.

For the fixed radio termination (FT):

The RFP do not transmit on more than 2 physical channels for which complementary physical channels do not exist.

A complementary physical channel is a physical channel between the same two radio endpoints which occurs 5 ms before or after the physical channel to which is complementary.

When an FT is addressing a specific PT then the first FT transmission is made in accordance with the scan sequence of the addressed PT receiver.

To continue transmitting on the selected physical channel the FT receives and indication that the PT is receiving the FT transmissions within 2 frames of the first FT transmission.

For the channel release:

A REP cease transmission on all physical channels if it has not received a valid indication of the other radio endpoint's identity within 10 seconds of the receipt of the last indication.

A REP which transmits on both the physical channel and complementary physical channel cease to transmit on the channels if either:

- ☐ The receiving endpoint indicate to the transmitting endpoint that transmission cease on both these physical channels; or
- ☐ The transmitting FT or PT is no longer attempting to receive at least one physical channel from the FT or PT to which it is transmitting.

In General:

No more than two physical channels based on the half slot format are sent within the same frame to the same REP;

The EUT is capable of communicating on all 10 DECT RF channels

30<sup>th</sup> Jul 2009

(Date)

Michael Tsui

(Printed full name)

(Authorized signature and company chop)



# MANUFACTURER DECLARATION

**VTech Telecommunication LTD**  
**23/F, Tai Ping Industrial Centre Block 1**  
**57 Ting Kok Road, Tai Po, Hong Kong**

---

(Name / Address)

declares for the Digital Enhanced Cordless Telecommunications (DECT) telephone system specified as

**E1425**

---

(Model Number)

**The Portable Part (PP):**

It is not possible for the user to alter the IPEI using any normally accessible procedure. We supply, in addition to the equipment, sufficient means in the equipment with instructions in the documentation to permit validation of the Equipment Manufacturer's Code and verification of the existence of the Portable equipment Serial Number (PSN) code in the equipment.

**The Fixed Part (FP):**

DECT FPs which do not transmit the TA escape message transmits the Nr message as defined in EN 300 175-3 [3] at least once every 10 seconds on all active physical channels; These Nr identity messages are transmitted with the appropriate A-field header code as defined in EN 300 175-3[3] and the Nr message contains an ETSI distributed code as defined in EN 300 175-6[6].

30<sup>th</sup> Jul 2009

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(Date)

Michael Tsui

---

(Printed full Name)

*Michael Tsui*



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(Authorized Signature & Company Chop)